

REMARKS

Claims 2 and 4-8 are pending in the application. It is gratefully acknowledged that Claim 4 has been allowed. Claims 7 and 8 remain objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims. Claim 2 is rejected under 35 U.S.C 103(a) as being unpatentable over Davies et al. (U.S. Patent 5,953,311) in view of Uesugi (U.S. Patent 6,510,133) and further in view of Seki et al. (U.S. Patent 5,694,389). Claims 5 and 6 are rejected under 35 U.S.C 103(a) as being unpatentable over Huang et al. (U.S. Patent No. 6,058,101) in view of Goldston et al. (U.S. Patent 6,570,943).

Regarding the rejection of Claim 2 under §103(a), the Examiner states that Davies et al. in view of Seki et al. renders the claim obvious. Davies et al. discloses timing synchronization in a receiver employing orthogonal frequency division multiplexing; Uesugi discloses a multi-carrier transmission method and data transmitter; and, Seki et al. teaches an OFDM transmission/reception system and transmitting/receiving apparatus.

Davies et al. teaches inserting a Pilot carrier before an IFFT. It is respectfully submitted that this feature merely corresponds to the conventional art of the present application. In other words, the conventional art and Davies et al. suggests inserting N pilot sample data (Pilot symbols) between data symbols.

Claim 2 of the present application teaches that, after the IFFT, copying a part of N data samples of an OFDM symbol in a guard interval insert (209), as shown in Fig. 4B.

Nowhere does Davies et al. teach a guard interval insert for copying a part of the N data samples of the OFDM symbol and inserting the copies data sample in the front of the data symbol.

Neither Uesugi nor Seki et al. cure the defects of Davies et al.

Based on at least the foregoing arguments, withdrawal of the rejection of Claim 2 is respectfully requested.

Regarding the rejection of Claim 5 under §103(a), the Examiner states that Huang et al. in view of Goldston et al. renders the claim obvious. Huang et al. discloses a synchronization method and system for a digital receiver; and, Goldston et al. discloses a method for equalization of complementary carriers in an AM compatible digital audio broadcast system.

Huang et al. in FIG. 3 teaches that in a fractional frequency offset estimation (40), an output is a frequency offset equated to that of Claim 5. It is respectfully submitted, however, that the input manner and the manner for outputting the offset recited by Huang et al. are not and cannot be equated with the features of Claim 5.

Huang et al. teaches estimating the frequency offset by using a Phase reference (PR) signal, an envelope detector and a differentiator. Claim 5 teaches estimating the frequency offset by using a guard interval.

Further, as to an integral frequency offset and synchronization, the decision and position compare (92), as illustrated in Fig. 3 of Huang et al., merely discloses an operation for compensating for each error.

Huang recites performing FFT on a received signal and then performing IFFT on the signal where the FFT was performed, and then estimating peak detection by using the signal where the IFFT was performed. Conversely, Claim 5 of the present application teaches estimating a fine frequency error by selecting a pilot symbol from the signal where the FFT was performed, i.e., Claim 5 is directed to the second fine frequency error compensation.

Goldston et al. does not cure the defects of Huang et al.

Based on at least the foregoing arguments, withdrawal of the rejection of Claim 5 is respectfully requested.

Independent Claims 2 and 5 are believed to be in condition for allowance. Without conceding the patentability per se of dependent Claim 6, this is likewise believed to be allowable by virtue of its dependence on its respective independent claim. Accordingly, reconsideration and withdrawal of the rejection of dependent Claim 6 is respectfully requested.

Accordingly, all of the claims pending in the Application, namely, Claims 2 and 4-8, are believed to be in condition for allowance. Should the Examiner believe that a telephone conference or personal interview would facilitate resolution of any remaining matters, the Examiner may contact Applicant's attorney at the number given below.

Respectfully submitted,



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